



National Park Service
U.S. Department of the Interior

**Southwest Alaska Network
Inventory & Monitoring Program**

240 West 5th Avenue, #114
Anchorage, Alaska 99501
907 664-3681 phone
907 644-3809 facsimile





Southwest Alaska Network Inventory & Monitoring Program

Integrating science, education, and resource
protection through monitoring.



Dwarf Fireweed in bloom at Aniakchak National Monument and Preserve.

Southwest Alaska National Parks – a gathering place

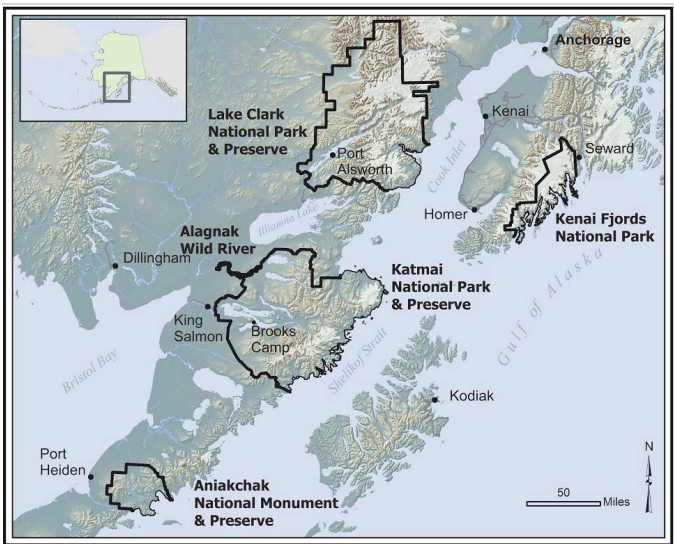
Southwest Alaska Parks are a gathering place. Mountains gather here where the Pacific oceanic plate descends beneath the North American continental plate building mountain ranges that span the breadth of Alaska. Glaciers gather here where storms from the Gulf of Alaska collide with steep coastal mountains and dump hundreds of inches of snow over a long 8- month winter. Waters gather here where vast icefields and glaciers give birth to more than 20,000 miles of rivers and streams and large lakes cover an area slightly larger than the state of Connecticut. Salmon gather here where they begin and end their epic journeys to the sea which cover hundreds or even thousands of miles. Ecosystems gather here where coastal rainforest, boreal forest, and treeless tundra meet to create a great diversity of plants and animals.

Applying Science to Protect Resources— Inventory and Monitoring

Southwest Alaska national parks were established to protect and preserve resources in perpetuity for the use and enjoyment of future generations. Applying good science to natural resource management is our best hope of retaining the unique values and grandeur of these special national parks. This brochure describes how biological inventories and long- term monitoring are being applied to advance our basic understanding of Alaskan park ecosystems and to help meet resource protection challenges.



Common merganser chicks



National Park Service units in the Southwest Alaska Network.

Southwest Alaska Network

The Southwest Alaska Inventory & Monitoring Network (SWAN) is an office of the National Park Service dedicated to providing the scientific foundation for effective, long-term protection and management of natural resources in five units of the National Park System. SWAN consists of Katmai National Park and Preserve, Aniakchak National Monument and Preserve, Alagnak Wild River, Lake Clark National Park and Preserve, and Kenai Fjords National Park. Collectively these parks comprise approximately 9.4 million acres or 2% of the Alaska landmass and represent 11.6% of the total land managed by the National Park Service. These parks include a diversity of geologic features, ecosystems, wildlife, and climatic conditions that are equaled few places in North America. Alaska’s national parks are among the last remaining wilderness areas of the world—large enough to allow ecological processes and biological diversity to evolve and adapt naturally.



Brown bears digging for clams at Katmai National Park and Preserve.



Coastal salt marsh in Lake Clark National Park and Preserve.

SWAN Parks

Kenai Fjords National Park—A land where the ice age still lingers and glaciers, earthquakes, and ocean storms are the architects. Created to preserve unique fjord and coastal rain-forest ecosystems, the vast Harding Icefield, diverse marine and terrestrial wildlife, and historical and archeological reminders of the Aboriginal peoples of the Alaska coast.

Lake Clark National Park and Preserve—A land where the Aleutian Range meets the Alaska range. Created to protect scenic beauty, volcanoes, glaciers, wild rivers and waterfalls, populations of fish and wildlife, watersheds essential for red salmon, and the traditional lifestyle of local residents.

Katmai National Park and Preserve—A land of remote wilderness, and rugged coastline. Created to preserve the Valley of Ten Thousand Smokes, a spectacular ash flow deposited by Novarupta Volcano, and more recently to preserve brown bear and salmon populations and their habitat.

Alagnak Wild River—Meandering west towards Bristol Bay, salmon return annually to spawn in the upper reaches. Created to preserve the upper 56 miles of the river, and its resources including all five species of pacific salmon, rainbow trout, arctic char, arctic grayling, and northern pike.

Aniakchak National Monument and Preserve—A vibrant reminder of Alaska's location in the volcanically active "Ring of Fire". Created to recognize the unique geological significance of the six- mile wide, 2,500 ft. deep Aniakchak caldera formed during a massive eruption 3,500 years ago.



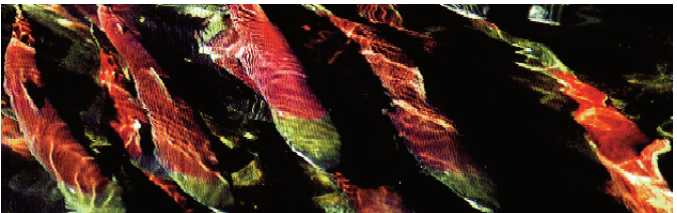
Alagnak Wild River

Uncovering the Diversity of Life—Biological Inventories

Biological inventories are extensive, point- in- time surveys of the composition, location, and abundance of plants and animals. During the past several years, SWAN conducted biological inventories of vascular plants, small mammals, freshwater fish, and landbirds. Many surprises have been uncovered along the way, from discovering hundreds of species of plants new to these parks, to documenting major range extensions for both the wandering tattler, a rare shorebird, and Alaska’s smallest mammal, the tiny shrew. These baseline inventories have delivered important information to managers and scientists concerning the diversity of life in Southwest Alaska’s national parks.

Detecting Trends—Long-Term Monitoring

Natural ecosystems are dynamic and constantly changing. In order to protect national parks for future generations, it is imperative that the National Park Service observe and understand the range of natural variation in park ecosystems and to detect any long- term adverse effects of human activities on park ecosystems. This requires scientifically sound information on ecosystem status and trends acquired through long- term monitoring of selected park resources known as *vital signs*. Park vital signs can be physical, chemical, and biological elements and processes of park ecosystems that represent the overall health or condition of the park. In practice, vital signs are measurable, early warning signals that indicate changes.



Sockeye salmon

A Warming Climate

Climate change is expected to result in significant changes to the landscape of SWAN parks. Examples of change include reduced glacier coverage, earlier snowmelt and peak stream runoff, and changes in vegetation due to melting permafrost. Targeted questions like those listed below provide a basis for understanding how park ecosystems are responding to warmer temperatures.

1. What is the natural variability in temperature and precipitation in SWAN parks?
2. What are the changes and trends in glacial extent?
3. How are onset, duration and extent of ice cover changing on large lakes?
4. How are the timing, location, and duration of snow cover changing?
5. How is the structure and composition of vegetation changing?

Spreading the Word - Education in the Parks

The broad-based, scientifically sound information obtained through inventory and monitoring can play a key role in strengthening the understanding and appreciation of science in our national parks. SWAN scientists and educators interpret and provide inventory and monitoring information to a wide group of audiences and in many different formats.

Information is available to the public through:

- Web sites
- Public workshops, conferences, and meetings
- Films
- Journal publications and news releases
- Public lectures



Aialik glacier in Kenai Fjords National Park.